

What claim:

1. A heat-resistant separator comprising:  
a non-woven fabric of high-melting resin, said fabric being of  
1 to 20  $\mu\text{m}$  in average fiber diameter,  
5 to 300  $\text{g/m}^2$  in basis weight,  
1 to 200  $\text{cc/cm}^2/\text{sec}$  in air permeability, and  
0.01 to 1.0 mm in thickness.
2. The heat-resistant separator according to Claim 1, having a real part impedance of 20  $\Omega\cdot\text{cm}^2$  or less at a frequency of 10 KHz and normal temperature.
3. The heat-resistant separator according to Claim 1 or 2, having a maximum real part impedance at a frequency of 10 KHz and 100 to 180  $^\circ\text{C}$  is 100 times or less of the real part impedance at normal temperature and 200  $\Omega\cdot\text{cm}^2$  or less in the absolute value.
4. The heat-resistant separator according to one of Claims 1 to 3, wherein said high-melting resin is selected from the group consisting of polyester, polyphenylene sulfide, polymethyl pentene and polyamide.
5. The heat-resistant separator according to Claim 4, wherein said polyester is polybutylene terephthalate.
6. The heat-resistant separator according to one of Claims 1 to 5, wherein said non-woven fabric is melt-blown.
7. A laminated heat-resistant separator comprising:  
a laminate having a melt-blown, non-woven fabric layer of high-melting resin, wherein said fabric layer being of  
1 to 20  $\mu\text{m}$  in average fiber diameter,

5 to 300 g/m<sup>2</sup> in basis weight,  
1 to 200 cc/cm<sup>2</sup>/sec in air permeability, and  
0.01 to 1.0 mm in thickness.

8. The laminated heat-resistant separator according to Claim 7 composed of a melt-blown, non-woven fabric layer of high-melting resin and non-woven fabric layer having a shut-down function.

9. The laminated heat-resistant separator according to Claim 8, wherein said non-woven fabric layer having a shut-down function is of polyolefin.

10. A laminated heat-resistant separator of polyphenylene sulfide, comprising:  
two or more laminated layers of melt-blown, non-woven fabric of polyphenylene sulfide, said fabric having

a fiber diameter of 2.0 to 8.0  $\mu$ m,  
basis weight of 20 to 60 g/m<sup>2</sup>,  
air permeability of 10 to 200 cc/cm<sup>2</sup>/sec,  
thickness of 100 to 300  $\mu$ m, and  
strength of 10 N/50mm or more in the MD direction.

11. The laminated heat-resistant separator of polyphenylene sulfide according to Claim 10, wherein said melt-blown, non-woven fabric of polyphenylene sulfide for the laminated layers has an average fiber diameter of 2.0 to 8.0  $\mu$ m, basis weight of 40 to 80 g/m<sup>2</sup>, air permeability of 5 to 20 cc/cm<sup>2</sup>/sec, thickness of 100 to 180  $\mu$ m, and strength of 40N/50mm or more in the MD direction.

12. The heat-resistant separator of ~~one~~ of Claims 1 to 11 which is used for a battery or capacitor.